ISSN (print) 0093-4666 © 2010. Mycotaxon, Ltd. ISSN (online) 2154-8889

MYCOTAXON

DOI: 10.5248/114.401

Volume 114, pp. 401–405 *October–December 2010*

A new species of *Podosporium* and a new record from southern China

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Abstract — Two conidial fungi, *Podosporium cyclocaryae* sp. nov. and *Endophragmiella theobromae*, occurring on dead branches of *Cyclocarya paliurus* and *Dendrocalamus giganteus*, respectively, are described and illustrated and compared with related taxa. The specimens were collected from tropical forests in Fujian Province, China.

Key words — anamorphic fungi, taxonomy

Introduction

There is an enormous diversity of anamorphic fungi growing on rotten wood and dead branches in the tropical forests of southern China, and several mycological investigations dealing with many new species have been recently published (Yuan & Dai 2008, Zhang et al. 2009, Dai et al. 2009). Two additional species have been found that are described below. One is proposed herein as a new species and the other is a new record for China. The type specimen is deposited in HSAUP (Herbarium of the Department of Plant Pathology, Shandong Agricultural University) and HMAS (Mycological Herbarium, Institute of Microbiology, Chinese Academy of Sciences).

Taxonomy

Podosporium cyclocaryae Y.D. Zhang & X.G. Zhang, **sp. nov.** Fig 1

MycoBank MB 518832

Coloniae in substrato naturali effusae, brunneae. Mycelium hyalinum, hyphae ramosae, pallide brunneae, septata, 3–4 µm crassis. Conidiomata synnematica, solitaria, erecta, atrobrunnea vel nigra, cylindrica, usque 490 µm alta, 39–49 µm crassa ad basim, saepe inflata. Conidiophora macronematosa, synnematosa, nonramosa, septata, laevia, brunnea

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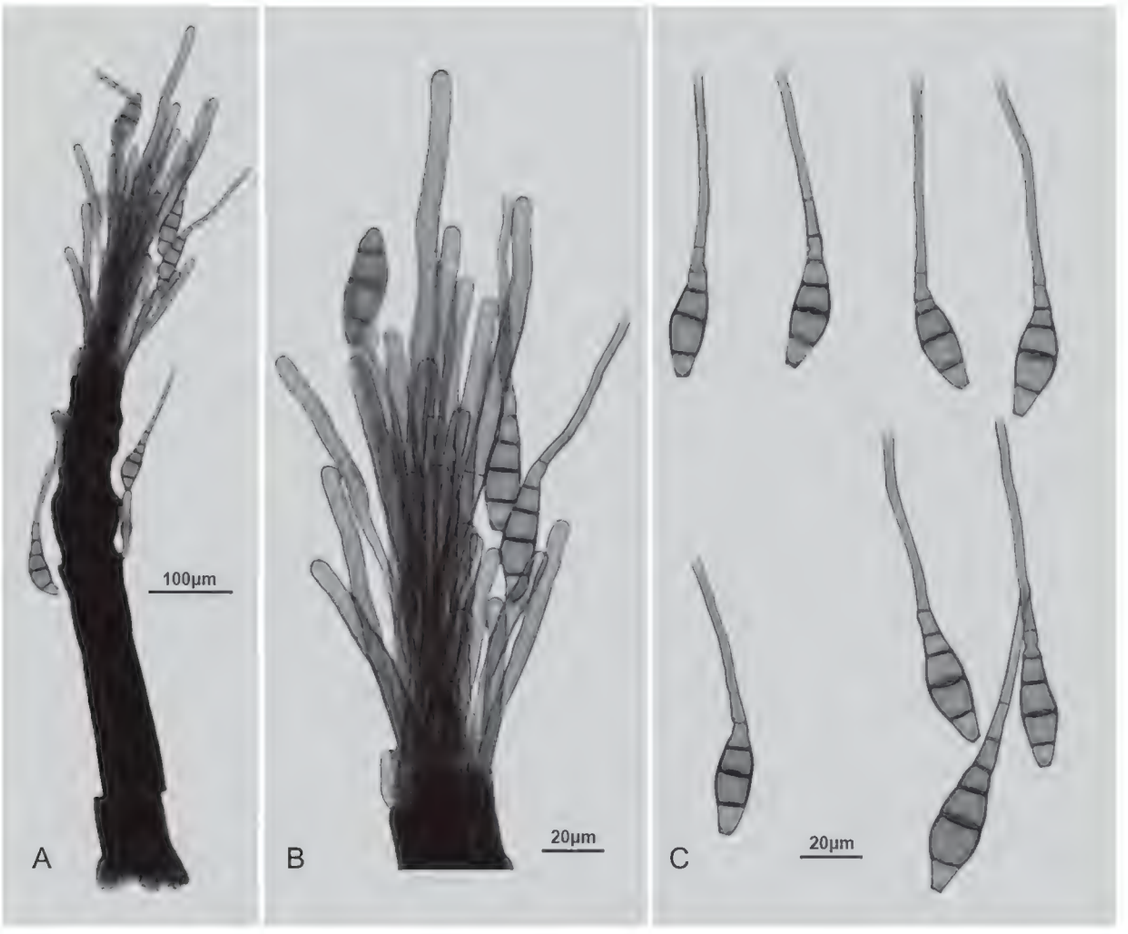

Fig. 1. *Podosporium cyclocaryae.*
A. Synnemata B. Conidiophores with conidia. C. Conidia.

vel atrobrunnea, usque 490 μm longa, 3.5–4.5 μm crassa, divergentia ad apicem et lateralia. Cellulae conidiogenae monotretica, cylindricae, integratae, terminales, determinatae, laeves, brunneae vel atrobrunneae, 6.5–10 μm longae, 2.5–3.5 μm crassa. Conidia solitaria, sicca, acrogena, obclavata, stricta vel leviter curvatae, rostrata, 7–10-septata, laevia, 77–122 × 10–15 μm, brunnea, pallidiora versus apicem, basim cum depresso hilo, 2.5–3 μm crasso, praedita.

Holotype: on dead branches of *Cyclocarya paliurus* (Batalin) Iljinsk. (*Juglandaceae*). Fujian Province, China, 11 Aug. 2009, Y.D. Zhang, HSAUP 0129 (isotype HMAS 146112).

Etymology: in reference to the host genus, *Cyclocarya*.

Colonies on the natural substratum effuse, brown. Mycelium hyaline, hyphae flexuous branched, pale brown, septate, 3–4 μm thick. Conidiomata solitary, synnematous, erect, dark brown to black, cylindrical, scattered, up to 490 μm high, 39–49 μm wide at the often swollen base. Conidiophores macronematous, arranged in synnemata, unbranched, septate, smooth, brown to dark brown, up to 490 μm long, 3.5–4.5 μm wide, diverging laterally and also terminally. Conidiogenous cells monotretic, cylindrical, integrated, terminal, determinate,

smooth, brown to dark brown, 6.5–10 × 2.5–3.5 μm. Conidia solitary, dry, acrogenous, obclavate, straight to slightly curved, rostrate, 7–10-septate, smooth-walled, 77–122 × 10–15 μm, brown, paler toward the apex, base with a depressed hilum, 2.5–3 μm wide.

Notes: The genus *Podosporium* was established by Schweinitz (1832), based on *P. rigidum* Schwein. After the holotype was discovered to be missing, Ellis (1971) lectotypified *P. rigidum* by specimens collected on dead stems and branches of *Ampelopsis* and *Rhus* from U.S.A. *Podosporium* is characterized by darkly pigmented and cylindrical synnemata consisting of distinct conidiophores terminating in monotretic, percurrent to rarely sympodial, clavate or cuneiform conidiogenous cells and brown, acrogenous, multiseptate, obclavate conidia (Ellis 1971, Chen & Tzean 1993). Worldwide, more than 60 species of *Podosporium* have been validly described. Only *P. elongatum* has been reported from China (Chen & Tzean 1993). Most species grow as saprobes on rotten wood and bark of various trees and shrubs or on dead herbaceous material. Of the known species, the conidia of *P. cyclocaryae* resemble those of *P. rigidum* (Schweinitz 1832) in having phragmoconidia. However, the conidia of *P. cyclocaryae* are rostrate and larger than those of *P. rigidum* (77–122 × 10–15 μm vs. 40–70 × 10–14 μm). In addition, the synnemata of *P. cyclocaryae* expand at the top and they are much shorter than those of *P. rigidum* (2 mm).

Endophragmiella theobromae M.B. Ellis, More dematiaceous hyphomycetes. 144 (1976) Fig 2

Specimens examined: on dead branches of *Dendrocalamus giganteus* Munro (*Gramineae*), forest park of Wuyishan, Fujian Province, China, 18 Aug. 2009, Y.D. Zhang, HSAUP H3140 (duplicate HMAS 146113).

Colonies effuse, hairy, dark blackish brown to black. Mycelium in the substratum sparse, composed of septate, smooth, pale brown, branched hyphae 2–3 μm wide. Conidiophores macronematous, arising singly or sometimes fasciculate, branched, erect, straight or slightly flexuous, smooth, septate, brown, paler towards the apex, up to 110 μm long, 7.5–8.5 μm wide, sometimes swollen at the base, with 1–4 proliferations. Conidiogenous cells monoblastic, integrated, terminal, percurrent, cylindrical, tapered to a truncate apex. Conidial secession rhexolytic. Conidia obovoid to pyriform, usually 2-septate, basal cell pale brown, central cells and apical cell dark brown, smooth, 17.5–30 μm long, 8.5–13 μm wide, with a distinct basal frill derived from the distal end of the conidiogenous cell.

Notes: The genus *Endophragmiella* B. Sutton was proposed and originally described by Sutton (1973) for two species: the type species *E. pallescens* B. Sutton and *E. canadensis* (Ellis & Everh.) B. Sutton. The genus is characterized

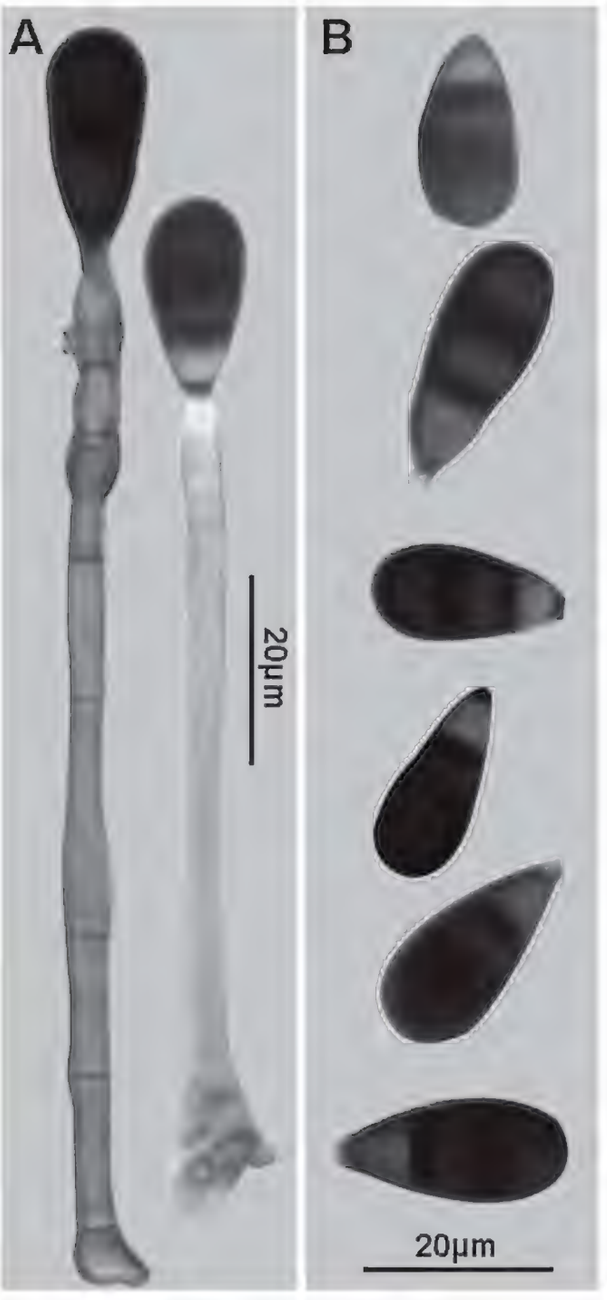

Fig. 2. *Endophragmiella theobromae*.
A. Conidiophores with conidia. B. Conidia.

by conidiophores that are macronematous, mononematous with conidiogenous cells integrated, percurrent proliferation, and solitary, euseptate or distoseptate conidia with rhexolytic secession. The genus has been revised by Hughes (1979) and enlarged by Kirk (1985) and Holubová-Jechová (1986). At present, the genus *Endophragmiella* comprises more than 80 species, most of which grow as saprobes on rotten wood and bark of various trees and shrubs or on dead herbaceous material.

E. theobromae was first described by Ellis (1976) from New Guinea on dead cortex of *Theobroma cacao*. Our species was collected from a monocotyledonous plant (family *Gramineae*) in Fujian, China, whereas *E. theobromae* is known only from a dicotyledonous tree (family *Sterculiaceae*) in New Guinea. Our specimen is much similar to the type material, but the conidia in our collection are slightly larger and the conidiophores are smaller. Despite these minor differences, we believe they are the same species in different regions. This is the first record of this species from China.

Acknowledgments

The authors are grateful to Dr Eric H.C. McKenzie and Dr R.F. Castañeda Ruiz for serving as pre-submission reviewers and for their valuable comments and suggestions. This project was supported by the National Natural Science Foundation of China (No. 30770015, 30499340, 2006FY120100).

Literature cited

Chen JL, Tzean SS. 1993. *Podosporium elongatum* a new synnematous hyphomycete from Taiwan. Mycological Research 97: 637–640. doi:10.1016/S0953-7562(09)81190-8

Dai YC, Cui BK, Yuan HS. 2009. *Trichaptum* (*Basidiomycota, Hymenochaetales*) from China with a description of three new species. Mycological Progress 8: 281–287. doi: 10.1007/s11557-009-0598-0

Ellis MB. 1971. Dematiaceous hyphomycetes. Commonwealth Mycological Institute, Kew, Surrey.

Ellis MB. 1976. More dematiaceous hyphomycetes. Commonwealth Mycological Institute, Kew, Surrey.

Holubová-Jechová V. 1986; Lignicolous hyphomycetes from Czechoslovakia 8. *Endophragmiella* and *Phragmocephala*. Folia Geobotanica & Phytotaxonomica 21: 173–197.

Hughes SJ. 1979. Relocation of species of *Endophragmia* auct. with notes on relevant generic names. New Zealand Journal of Botany 17: 139–188.

Kirk PM. 1985. New or interesting microfungi XIV. Dematiaceous hyphomycetes from Mt Kenya. Mycotaxon 23: 305–352.

Schweinitz LD von. 1832. Synopsis fungorum in America boreali media degentium. Transactions of the American Philosophical Society: 4: 141–316. doi:10.2307/1004834

Sutton BC. 1973. Hyphomycetes from Manitoba and Saskatchewan, Canada. Mycological Papers 132:1–143.

Yuan HS, Dai YC. 2008. Two new species of *Junghuhnia* (*Basidiomycota, Polyporales*), and a key to the species of China. Nordic Journal of Botany 26: 96–100. doi:10.1111/j.1756-1051.2008.00169.x

Zhang K, Fu HB, Zhang XG. 2009. Taxonomic studies of *Corynespora* from Hainan, China. Mycotaxon 109: 85–93.